Gp 362.3
M16h

Heredity as it relates to feeble-mindedness.

The Library
of the
University of North Carolina



Endowed by The Dialectic
and
Philanthropic Societies

Cp 362.3
M16h

HEREDITY AS IT RELATES TO FEEBLE-MINDEDNESS.

By

C. B. McNairy, M. D.,

Kinston, N. C.

Reprint from

THE CHARLOTTE MEDICAL JOURNAL.

October, 1915.

CHARLOTTE, N. C.

Digitized by the Internet Archive
in 2013

http://archive.org/details/hereditysitrela00mcna

HEREDITY AS IT RELATES TO FEEBLE-MINDEDNESS.*

By C. B. McNairy, M. D., Kinston, N. C.

In discussing this subject, I trust I will not be expected to rely upon my own observation, experience or knowledge, which is quite limited, therefore, I will of a necessity, be compelled to quote freely, from psychologists, biologists and the later authors on works of heredity and feeble-mindedness, giving a short summary of their conclusions.

Webster defines heredity as that which descends by inheritance. I think our former ideas of heredity have been very charitable to our forebears, in that we were wont to trace only our good qualities of manners, intellect and social and political achievements to the long ancestral stream of blue blood or royalty that courses through our veins, and our misfortunes, mental and physical afflictions to something entirely foreign, for instance, to evil spirits, witchcraftery, the lack of social, educational and religious environments.

How often have we heard it said that he or she came of the noblest blood but seems possessed of the devil, not for an instant dreaming that they have inherited long accumulation of ancestral weaknesses, and really are only the un-

P18207

*Read before the North Carolina Medical Association in Greensboro, N. C., June 17, 1915.

fortunate objects of the penalty of the sins of the fathers.

Mendel's law, which he discovered by the crossing of individual plants, mostly peas, with one pair of contrasting characters. His method consisted in crossing two forms having distinct characters and counting the number of offspring in successive generations showing one of the other of these characters.

He called the peculiarity with which the two plants differed, the unit character, for example, the tallness or the color of the seed, he called the characters which appeared in the first generation of the result of his cross, fertilization, the DOMINANT. The one that did not appear until the second generation he called RECESSIVE on the ground that it was there in the first generation, but it did not appear in the next generation.

Considering the spermatozoon and ovum in animals. It was found that if these "germs cells" previous to being placed under the microscope, were put in some kind of stain, certain bodies appeared in the cells because they had absorbed some of the stain or coloring matter. Nothing was known of the function or the purpose of these bodies, but because they become colored under this treatment they were called color bodies or chromosomes.

"It was found later that there was practically always the same number of these bodies in the germ cells of the same species of plant or animal. They were

thus not accidentally colored bodies, but bodies of some significance. Futhermore, it was discovered that there is a process of maturing or ripening in these cells before they are ready to unite with the cell of the opposite sex for the formation of new individual. In this ripening, the number of these bodies, or chromosomes, is reduced one-half."—(Feeble-Mindedness, Goddard, p. 534).

"It is thus seen that the new individual formed by this union of these two mature cells there will be the regular number of bodies, or chromosomes, half of which have come from each parent. It was soon concluded that these chromosomes were to be considered the bearers of Heredity, which in part at least, explains the mechanism of the transmission of the traits from parents to children. The offspring may inherit the same trait from both parents, or he may inherit from only one, therefore, we have duplex, simplex, nulliplex, giving us the Neomendelian classfication of individual inherited determiners. For reasons which we cannot explain here, the biologists conceive that each chromosome has within it what are called determiners, that is certain particles, molecules or elements, which contain within themselves the potential organ which they represent, or some quality or characteristic of the organ such as the color of the eye or of the hair. If the individual has brown eyes it is because his chromosomes carried determiners for brown eyes. If

he has long arms, it is because his chromosomes, some of them at least, carried determiners for long arm bones." —(Feeble-Mindedness, Goddard, p. 536).

"Many investigators have carried out similar experiments on many species of animals and plants and have greatly extended our knowledge of the principles of inheritance discovered by Mendel. But in the main, Mendel's conclusions have been confirmed again and again, so that there is no doubt they constitute an important rule of inheritance among all organisms."—(Heredity and Environment, Conklin, pp. 250, 297).

Breeders have long known that it is possible to get certain desirable characters of an organism from one race, and other desirable characters from another race. Since the discovery of the Mendelian theory of Heredity, such new combination of old characters have repeatedly been made, and with almost the same certainty of results as when the chemists make combinations of elements or radicals. This is the chief method employed by Burbank in producing his really wonderful new creations in plant life. By extensive hybridization, he brings about many new combinations of old characters, a few of which may be commercially valuable."—(Heredity and Environment, Conklin, p. 379).

"East and Shull have shown that Hybrids between two races of corn may be very much larger and more fertile than either parent. Unfortunately, such

hybrid races of corn do not breed true and crosses, must be made anew in each generation if maximum results are to be had. Nevertheless, this method of hybridization, or heterozygrosis, as it has been called, offers extremely important means of quickly producing very vigorous and fruitful individuals, but not lines or races which breed true."

"This is what is meant by the control of heredity; namely, the possibility of preventing the reproduction of individuals with bad traits, and of making new and favorable combinations of old traits by means of selective breeding, and of seizing upon and perpetuating new and favorable mutations."

"The Mendelian association and disassociation of characters produce new forms of adult and plants, but not new Heredity Characters. New combination of factors may be compared to new combinations of chemical elements. You can always get out of the combination what went into it. The actual origin of new hereditary characters or mutations is obscure. Many individual modifications may be produced, which do not become racial. In most cases, such mutations consist in the dropping out of some old character rather than in the addition of a new one."

"Science has taught us something of the wonderful stability of the past time and of future ages—something of the eternity of natural processes—it is surely not possible, to improve on nature's

method of eliminating the most undesirable lines from reproduction. This has been the chief factor in the establishment of the races, of domesticated animals and cultivated plants. The improvements of environment and opportunities for individual development, enables men at the present day to get more and more of their heredity than was possible in the past. The advance of civilization has made only improvements of environment, but neither environment nor training change the hereditary capacity of man. There has been no perceptible improvement in human heredity within historic time. Nothing comparable with the changes which have occurred in domesticated animals. Indeed, no modern race of men is the equal of certain ancient ones. The method of elimination by the destruction of the weak, cowardly, and antisocial which was the method practiced in ancient Sparta is repungent. The worst forms of mankind may be prevented from propagating, and the best types may be encouraged to increase and multiply.

"Children's children are the crown of old men and the glory of children are their fathers." Prov. 17 : 6.

"Galton has pointed out the fact that in the little country of Attica in the century between 530 and 430 B. C. fourteen illustrious men, one for every four thousand three hundred of the free born adult male population."

In the two centuries, 500 and 300 B.

C., this small barren country, with area and total population about equal to that of the present state of Rhode Island, with less than one-fifth of the free population, produced twenty-five of the illustrious men. Among whom were Pericles, Aristodes, Comon, Themistocles, Euripides, Sophocles, Socrates, Plato, Aristotle,. Demosthenes and others. These illustrious men came from a remarkable race, composed of individuals, by a process of unconscious, but severe selections. Athens was the intellectual and social capital of the world and to it the most ambitious and capable men were irresistably drawn. It was a good heredity as well as good imigration that made Athens famous."

"Galton concludes that the average ability of the Athenian race of that period was, on the lowest possible estimate, as much greater than that of the English race of the present day, as the latter is above that of the African Negro."

"Social morality grew exceedingly fast, marriage became unfashionable and was avoided. Many of the more ambitious and accomplished women were avowed courtesans, and consequently infertile, and the mothers of the incoming population were of the heterogeneous class. It is therefore no surprise to us that the high Athenian breed decayed and disappeared." "He that begetteth a fool, doeth it to his sorrow, and the father of a fool hath no joy. A foolish son is a grief to his father, and bitterness

to her that bare him." Prov. 17:21 and 25.

The best authorities of today give heredity as the direct cause of feeble-mindedness in 75 per cent. of the cases with the most conservative, others holding that as much as 90 to 95 per cent. of all feeble-mindedness is due to heredity."—(Dr. H. H. Goddard, Vineland, N. J.; Dr. Burnstine, Rome, N. Y.; Dr. Richard Cabot, Boston, Mass.; Dr. Fernald, Waverley, Mass.).

"Feeble-Mindedness produces more pauperism, degeneracy and crime than any other one force. It touches every form of charitable activity. It is felt in every part of our land. It effects in some way all our people. Its cost is beyond our comprehension. It is the unappreciated burden of the unfortunate. It is a burden we are compelled to bear; therefore, let us bear it intelligently, to the end that the chain of evil may be lessened, the weak cared for and the future brighter with hope because of our effort.

"Ye who are strong must bear the infirmities of the weak."—(Amos W. Butler).

"There can be no doubt that the main characteristics of every living thing are unalterably fixed by heredity. Men differ from horses or turnips because of their inheritance. Our family traits were determined by the hereditary constitutions of our ancestors, our inherited personal traits by the hereditary consti-

tutions of our fathers and mothers. By the shuffle and deal of the hereditary factors in the formation of the germ cells and by the chance union of two of these cells in fertilization, our hereditary natures were forever sealed. Our anatomical, physiological, psychological possibilities were predetermined in the germ cells from which we came. All the main characteristics of our personalities were born with us and cannot be changed except within relatively narrow limits. 'The leopard cannot change his spots nor the Ethiopian his skin,' and 'though thou shouldest bray a fool in a mortar with a pestle yet will not his foolishness depart from him.' Race, sex, mental capacity are determined in the germ cells, perhaps in the chromosomes, and all the possibilities of our lives were there fixed, for who by taking thought can add one chromosome, or even one determiner to his organization?"

(Conklin, Heredity and Environment, Page 447.)

It has been well said that there are three important events in a man's life:

"His ingress into the world.
His progress through the world.
His egress out of the world.
His ingress into the world is naked and bare.
His progress through the world is trouble and care
His egress out of the world is, God knows where

If he does well here, he will do well there."





FOR USE ONLY IN

THE NORTH CAROLINA COLLECTION

UNCPS 55514